

The real digital divide:

Convergence and South Africa's
telecommunications and broadcasting policy

Neil Emerick

First published in **August 2003** by **The Free Market Foundation**

Johannesburg: PO Box 785121, Sandton 2146, South Africa

Tel: (011) 884 0270 • Fax: (011) 884 5672 • Email: fmf@mweb.co.za

Cape Town: PO Box 10074, Caledon Square 7905, South Africa

Tel: (021) 465 1856 • Fax: (021) 465 1860 • Email: fmf.ct@mweb.co.za

Website: www.freemarketfoundation.com

© The Free Market Foundation 2003

FMF Monograph No. 36

All rights reserved

ISBN: 1-874930-62-7

Contents

Foreword

The author

Acknowledgements

1 Introduction

2 Convergence and the need for open markets

It's not the same world ...

Why open markets?

Duopoly or full competition?

Getting the prices right

Fixing imperfect markets

Picking winners

Horizontal classifications

3 Legal framework: What do we want to see?

The legal problem

Political control of an industry

Laws of general application

The role of the regulator (if any)

The role of licences (if any)

Separation/non-duplication of powers

Foreign restrictions

Focus on consumers, not producers

4 Private ownership of the frequency spectrum

Spectrum as an asset

Commons or private property

Where is spectrum privately owned?

Auctioning of spectrum rights

Black Economic Empowerment (BEE)

A spectrum deeds office

Making the move...

5 Universal access

Open markets imply universal access

The debate on second generation rights

Universal obligations

Supply-side purchasing

Customer-side purchasing

Television and radio as universal services

Government provision of services

Devolving provision

Protectionism under any other name

Investment in the industry

6 Transition

Voice-over-IP

Re-sale of infrastructure

Repeal the acts

Privatise the incumbents

Tests for new legislation

Moving to an open market environment

Implementing a legal framework of general application

Private property framework for frequency spectrum

Universal access guidelines

7 Conclusion

References

Foreword

Technological advancement plays a pivotal role in bringing about economic growth and development in modern industrial economies. To this end, economic history is well populated with evidence of the close, mutually beneficial relationships that exist between technology and economic progress. That said, although some uncertainty about the ‘endogeneity’ of technological advancement exists, there is no doubt that socio-economic improvement and technological progress are highly correlated economic variables. A recent example of this symbiotic relationship is offered by advances that have taken place in information communication technology (ICT) over the past two decades, which have hugely improved global communications and dramatically reduced the costs of information storage and access to knowledge. The economic implications of this advancement generally have been profound for businesses, individuals and governments globally. Moreover, such advancements continue to offer the capacity to deliver substantial economic and social improvements to beneficiaries of technological change.

In the same breath, however, obstacles to technological advancement serve as a brake on increases in economic efficiency, growth and development. These supply-side chokes present themselves in different forms, ranging from a scarcity of natural endowments – such as a shortage of water-based energy to power hydroelectric turbines – to artificial blockages such as prescriptive legislation. It goes without saying that all forms of such obstructions are deleterious to economic progress. However, it is the last-mentioned type – artificial blockages – that is particularly distressing to advocates of technological change as a basis for economic advancement. The reason for this is straightforward: artificial chokes are human constructs.

It is within this context that Neil Emerick’s paper, *The Real Digital Divide: Convergence and South Africa’s Telecommunications and Broadcasting Policy*, examines the rationale behind extant and proposed regulatory frameworks in South Africa’s economically important ICT industry. The paper puts forward a number of fundamental arguments relating to the economy, technology and the regulatory environment. However, three arguments deserve particular attention.

First, South Africa’s ICT industry currently is managed within a command-and-control regulatory framework. This approach by the state is based on the assumption of the superiority of planned results over market-determined outcomes.

However, and second, there is a wide body of evidence pointing out the inability of central planning to achieve economic efficiency. Thus, through a series of prescriptive and close controls on the application of technology, South Africa’s ICT industry suffers under the burden of artificial supply-side blockages. The net results of this regulatory environment include, *inter alia*, higher costs of production, reduced competitiveness within and between industries, inefficient capital allocations, underinvestment, slower economic growth and a skewing of the distribution of income and wealth. Further, and in contrast to the South African experience, international evidence points to the effectiveness of freer regulatory environments in the ICT industry, such as pure market-based systems, to deliver efficient outcomes that promote economic gain and bring about improvements in social welfare. Importantly, Emerick notes that under market-based systems, when mistakes are made by firms – such as the adoption of inappropriate technology – the costs of such blunders are for the account of the firm, and not the purse of the taxpayer. As such, market-based frameworks offer a substantially greater potential to allocate scarce capital efficiently and, in so doing, deliver social improvements via a host of beneficial economic spin-offs.

Against this backdrop, and third, the paper is presented at a time when South African policy makers have the opportunity to shift away from the extant command-and-control regulatory framework that

chokes economic activity towards a market-based framework that offers substantial economic gains. Thus, and to misquote Emerick, domestic policy makers now have the opportunity to undo the regulatory mistakes of the past by moving swiftly towards an open-market environment in the ICT industry. Under this arrangement, the establishment and protection of private property rights have the potential to deliver outcomes that are economically superior to those available under central planning. Global evidence suggests that the manner by which this is best achieved is through the sovereignty of consumer votes. Under this type of arrangement, markets automatically place economic integrity ahead of vested interests, where the latter often serve near-term goals of narrow groupings at the expense of longer-term broader economic advancement. But then these are well-understood and generally accepted principles of modern economic theory.

As a final note, Emerick's paper is best seen as a forward-looking document that is descriptive rather than prescriptive, and is based upon a careful reflection on the limitations of extant legislation and the current regulatory environment. The paper makes an important contribution to the debate on optimal approaches to regulation in industry and the ICT industry in particular – an industry that holds enormous potential, if adequately and sensibly harnessed, to promote South Africa's socio-economic wellbeing.

Adrian D. Saville

Associate Professor in Finance, University of Natal
Publications Editor, FMF

The author

Neil Emerick is a free-lance researcher, writer and software consultant, specialising in the Information Technology (IT) sector and macro-economic policy. Born in England, he worked in the London capital markets before moving to South Africa in 1990. He ran his own software company for seven years before selling to a listed IT company, where he remained for a further four years. Since then, he has had several articles published on the benefits of limited government, and this year was a contributor to the Fraser Institute's Economic Freedom of the World Report 2003. He has a Bachelor of Commerce degree from the University of South Africa.

Acknowledgements

The author would like to thank Jim Harris and Gary Moore for their philosophical and legal insights. Thanks also go to the layout and editing work done by Gail Day, Wendi Cusins and Adrian Saville; the encouragement from Eustace Davie and Leon Louw; and the support of Theresa Griesel, who patiently endured numerous drafts.

1 Introduction

South Africa's Telecommunications Act of 1996 states:

34(2)(a) No investment should take place in South Africa in the field of telecommunications unless invited to do so by the Minister.

Actually, that is not quite what it says. The exact wording is:

34(2)(a) No application shall be lodged or entertained in respect of a licence to provide:

- a) a public switched telecommunication service;
- b) a mobile cellular telecommunication service;
- c) a national long-distance telecommunication service;
- d) an international telecommunication service;
- e) a multimedia service; or
- f) any other telecommunication service prescribed for the purposes of this section,

unless such application is lodged pursuant to and in accordance with an invitation issued by the Minister...

But the effect of the two versions of the clause is the same.

How a developing country could retain such a self-defeating clause, restricting the largest growth industry in the 21st century, is shocking. The legislation implies entrepreneurs need not decide what products to create and what infrastructure to build. Rather, studies undertaken by the Department of Communications will find out what technologies are needed. Then, when the Minister decides, invitations to apply for licences will be issued.

The legislated outcome is a complete rejection of market principles, which work on private business satisfying the needs of customers. South Africa, instead, has a rigid, government-decreed planning system that allows new players into the telecommunications industry only when the authorities deem the time to be right. Subsequently, we have the typical result of a government-planned system: poor, inadequate infrastructure that is expensive and ill-suited to serve South Africa's economy.

Telecommunications in South Africa has always been a highly politicised industry. But the reality of excess government interference is seriously beginning to hurt the economy and society more broadly. Particularly, it is the recent ability to convey all data digitally that is causing the biggest upset. Whereas previously communication technologies used analogue methods, digitalisation means data can be generated in a private network, beamed across a roof via microwave, re-ordered on an Ethernet backbone and then wander out over a public-switched line to be broadcast via satellite to an overseas receiver – all without corruption at the other end. The message becomes everything – the underlying network technology, irrelevant.

Many countries have adapted their legal systems to reflect the convergence of different media. South Africa has not. Our legislation focuses on the networks and who should run them. The matter is made worse by the perversion of incentives this creates. Specifically, the retention of such law creates skewed incentives for other economic players, who ignore customer demands and misallocate capital. This legislated business milieu has to change if we are to re-align our skills and technologies with the modern digital world.

Without a flexible legal framework South Africa runs the risk of under-developing new industries. How many jobs do not exist because the telecommunications infrastructure cannot support certain kinds of data activity? What is the opportunity cost to South Africans who cannot do business with foreign counterparts because they are unable to communicate with them at globally competitive prices?

This monograph attempts to address these issues and follows the Convergence Colloquium held by the Department of Communications in July 2003. The monograph recognises that a process of policy review is now under way and – in putting forward ideas – assumes policy makers have the opportunity to try an approach other than the “managed liberalisation” implemented during the past five years. This paper argues the political goals will be more comprehensively achieved under a policy of complete liberalisation of, and suggests ways of moving to, a more open environment.

Against the backdrop of this introduction, chapter 2 focuses on the benefits of a free economy over a highly regulated one. The chapter also addresses some of the arguments antagonists will use to disparage market effectiveness at protecting consumers’ interests.

Chapter 3 reflects on the requirements from a legal framework in order to conduct business in a wired world. It dispels the notion that micro-management of the industry is required, and argues that laws of general application are preferred. The role of a regulator is discussed, though it is proposed that such a body would be unnecessary given adequate levels of market competition.

Chapter 4 examines the argument that frequency spectrum be transferred from public ownership to private ownership as a more efficient way of handling this scarce resource. Given this stance, the chapter goes on to suggest ways in which this might be done to generate the maximum economic benefit to the South African public.

With economic and legal aspects dealt with, chapter 5 looks at the issues surrounding the policy of universal access, and how supplier “obligations” have been used to try and achieve it. The chapter suggests the policy of “obligations” has not worked and looks at alternative methods of public-sector communication services delivery.

Moving from the current situation to an open market requires a series of steps, and chapter 6 offers legal suggestions by which the principles in chapters 2 to 5 may be implemented. It proposes changes that can be implemented quickly and also offers a set of tests by which any new policy or legislation may be judged.

Chapter 7 concludes the arguments and urges a fast-track process to radical telecommunications and broadcasting reform, as the basis for a more open and productive digital communications environment.

2 Convergence and the need for open markets

It's not the same world ...

What has happened in telecommunications and broadcasting that requires the overhauling of our legal framework? Well, certain things have changed. The Internet, for one, has firmly established the transfer of information as a major feature of the modern economy. Information production and distribution now comprise significant portions of any modern economy, significantly out-ranking sectors such as agriculture. Convergence of certain technologies is another reason for change. The digitalisation of data means it can be conveyed over many technologies without losing original information. Laws were primarily built around the technologies used for conveying data, which distinguished content such as television, voice or data. Now that digital technologies have blurred the distinctions between different network equipment it is increasingly difficult for government to apply old laws to the new environment.

The political pressure being brought to bear is two-fold. First, we need to create a legal environment that more accurately reflects what is going on in terms of convergence. It does not help to have laws made meaningless by technology. Second, government must be concerned with the economic well-being of its citizens. For this reason, laws that stop economic progress must be reviewed. The costs and benefits perceived when the law was implemented have to remain valid. If something has changed, then so should the law.

As it stands, South African communications policy is not effective at promoting economic development across all industrial sectors. The question for South Africa is what a new legal framework should embody and how it should appear. Should a reluctant liberalisation take place with regulated incumbents working under partial competition? Or should the markets be opened fully to competition?

Why open markets?

Since 1989 and the collapse of the socialist economies there has been little doubt that open markets produce more efficient results than planned economies. Consider the following data. This table shows the economic freedom ranking of certain Asian countries and their Internet penetration rates.

Country	Ranking out of 123 countries on economic freedom	Internet penetration as a percentage of the population
Hong Kong	1	38%
Singapore	2	33%
South Korea	28	36%
Taiwan	31	58%
Malaysia	50	8%
Philippines	51	1%
Thailand	62	2%
China	100	6%

Source: Economic Freedom of the World 2003

There are many socially desirable goods – such as health, longevity and literacy levels – that correlate highly with the overall level of economic freedom in a country. Internet penetration rate – and therefore communications access – appears to be no exception.

Why open markets perform best remains the domain of economic study. But empirical evidence shows they produce more products at lower prices with higher levels of customer service than state-run or state-created monopoly environments. Fear of competition generates insecurity, which is a prime motivator for innovation and customer respect. As Adam Smith said in “The Wealth of Nations”, Book I Chapter X:

The real and effectual discipline which is exercised over a workman ... is that of his customers. It is the fear of losing their employment which restrains his frauds and corrects his negligence.

Customer acquisition is expensive, and losing customers can destroy businesses. The dominant feature of market winners is the constant attendance to customer needs. When no alternatives exist due to over-regulation, customers are left with no choice but to suffer the disrespect of poor service.

Duopoly or full competition?

When the United Kingdom (UK) considered what to do about its inefficient monopoly telephone market, it decided upon duopoly as a first choice. The rationale was that under complete liberalisation new entrants would waste resources competing against each other rather than the incumbent. Only a single competitor would build up market share more rapidly and provide more sustained competition. As it turned out, the new entrant focused on the business market and showed little interest in investing in a national network. The argument for restricted access did not work. Only after 1991, following a revision of this policy, did true competition to British Telecom’s (BT’s) infrastructure emerge.

Cable television operators, previously not licensed to provide voice telephony, expanded their networks providing competitive infrastructure to BT in the local loop. Other companies were licensed to offer International Simple Resale (ISR) services over leased circuits connected to the public switched network. This provided rapid competition in international phone calls, with prices dropping at least 50% in real terms since 1991. Currently, there are some 177 licensed public telecommunications operators in the UK, most of whom are providing domestic and international telecommunication services. The idea that competition is best offered to an incumbent by another large operator was therefore refuted. Competition in many service areas by many different operators was the real success factor, driving prices down and service levels up.

Unfortunately, South Africa opted to make the same mistake when it licensed only one competitor to the monopoly telephone operator. This inevitably restricts the development of new infrastructure, particularly from international companies who have experience in cable television and other complex network forms. A factor limiting the damage, however, could be the introduction of competition in the retail voice business. The removal of the restriction on Voice-Over-Internet-Protocol (VOIP) would immediately liberate South African business in a meaningful way. Being allowed to build networks catering for both voice and data, firms could employ technologies such as wireless or satellite to get around the public switched networks. Such alternatives would at least bring some competitive pressure to bear.

Getting the prices right

An economist once said the most crucial component of a market economy was to get the prices right. Any tinkering with the price mechanism in an attempt to correct perceived market imperfections rarely has the desired result. Unfettered prices are simply more efficient at providing information required by consumers and producers than any government regulator can hope to be.

This dual role for prices has to be understood. In a single number – the price – consumers get information relating to the difficulty in manufacturing and scarcity of a good in relation to other

goods. Producers learn of investment opportunities from the demand reflected in higher prices. They will subsequently direct their energies and capital to the markets that prices prioritise.

This subtle mechanism is often lost on government bureaucrats who believe they have the power to alter prices without causing damage. This is especially so when prices have been politicised by the way that firms are allowed to enter the market (either freely or by restrictive licensing). Limiting competition on the one hand necessarily means intervening on the other and inevitably government feels the pressure from consumers to control prices politically. The act of price-capping may be welcomed by consumers in the short run, but it destroys the investment-demand signal it carries to producers. If prices are held low in a market with pent-up demand then producers are not alerted to customer preferences. Consequently, potential producers will not invest, allocating their resources to other markets. There is also the danger that marginal players will leave the industry, creating more scarcity.

In moving from a politicised environment to an open one, where businesses are free to set their own prices and strike their own deals, it is tempting for government to want to dictate outcomes. However, such interference should be resisted. The best way of dealing with the power of an incumbent is to open the market up to competition. If an open-market policy is pursued in South Africa, there should be no requirement to regulate the tariffs of Telkom, the cell phone operators or any other telecommunications and broadcasting firm. The Organisation for Economic Co-operation and Development (OECD) report on telecommunications regulatory reform (2002,11) says:

In a liberalised telecommunication service market where there are an increasing number of market players and where services are offered competitively, it is not necessary to maintain special regulations on the incumbent in addition to regulation based on general competition or consumer protection principles.

Fixing imperfect markets

Officials often only pay lip service to the idea of the market as an efficient allocator of goods and services, arguing for intervention because markets are imperfect or can “fail” in some way. No market in the real world will reflect the definition of the perfect market. Such a case requires innumerable suppliers, costless information to consumers and so on. Reality is not so accommodating. But there are three arguments that suggest government should not try to fix imperfect markets.

First, if the problem is one of inaccurate information, then imperfect government is just as likely to fail as an imperfect market. A government attempting to duplicate market mechanisms has a great deal of work to do. It must gather information from a diverse array of sources including costs of production possibilities, sources for various inputs, different distribution options and changing customer demands. That information has to be fresh and regularly updated, as it is in the market place. The process for arriving at decisions must also be quick. If a state body has to make decisions based on many complex variables, finding the optimal solution may be an infinitely complex problem. That further assumes they have attracted the level of personnel able to make such skilful decisions.

Second, we have to assume that any bureaucracy in charge of managing a market in the ‘public interest’ is working with benevolent goals in mind. Is there any evidence to suggest that such incorruptible Platonic Guardians find their way into public service and are able to execute their duties without regard for vested interests? Evidence suggests that perfect governments are just as unlikely as perfect markets and that imperfect markets are usually far better performers than imperfect governments. If there is a simple choice between the two, then markets should be chosen on the grounds of personal liberty.

Third, a laissez-faire market model experiments with numerous “bets” simultaneously. Consequently, many entrepreneurs experimenting with different products to satisfy many tastes will yield better results on average than a single-policy experiment by government. Common sense tells us not to put all our eggs in one basket. Yet governments maintain a single vision of the public interest and say they know how this is comprised. Even with benevolent motives in mind government cannot always get it right, and evidence suggests government often gets it wrong. There is a natural compensating mechanism within markets not prevalent in economies with high levels of state intervention. When government bets the house and gets it wrong the effects are disastrous. Many small bets lessen the impact of being wrong and lose private money – as opposed to public money – in the process.

Picking winners

Government should be wary of attempting to manipulate the imperfect market, since better-than-market outcomes are unlikely. The state should be even more wary of intervening in an attempt to pick winners. Though broadband or wireless looks critical this year, subsequent developments could require a radical departure from these technologies. Private money is at liberty to take these risks, with the reward of profit favouring those who guess correctly. Governments, using taxpayers’ money, cannot afford to take this risk. The nature of government requires that it deliberate (publicly) over policy issues and, once decisions have been made, allow time to render the full effects. In an industry, such as telecommunications, which has significant technological discoveries being made in very short periods of time, it is difficult for government to develop industrial policy favouring certain technologies over others. Worse, presuming it could pick winners accurately, we cannot be sure the winning technologies would not be superseded quickly. The nation would then be left nursing fledgling companies with protectionist measures for many years to come.

Horizontal classifications

In defining new telecommunications policy, the government must be wary of introducing artificial segregation of players in the market. A few countries, held up as examples, have dealt with convergence by identifying classifications within the information supply chain, such as content providers, service providers, network providers and end-users. There is nothing wrong with these classifications if we accept their imperfections, but we move into areas of difficulty if they are used as the basis for policy. Such abstractions are rarely demarcated cleanly in the real world, and policy that attempts to create distinguishable markets based on them will face the same problems as policies built around technological assumptions.

The state must stay well away from attempting to determine arbitrary legal structures around imaginary abstractions. Even worse, it should not attempt to manage pricing within such classes. All manner of favourable arrangements can be constructed between end-user, service provider or content provider and any one of them may impose or share final costs of delivery to the end user.

Dictating ownership requirements between segments must also be avoided. Government is not in a position to know which economic structures are efficient for the companies involved, and should not adopt fixed ideas about competition within such structures. This principle must be extended to ownership by foreign firms. Concentration in a given horizontal classification is not of concern if we want to encourage investment and growth in this country.

The information and communication technology (ICT) infrastructure will be the foundation for much of the new-look economy and we need all the help we can get if other sectors in the economy are to compete internationally. Limiting foreign capital, or worse, limiting foreign labour is cutting off our nose to spite our face.

3 Legal framework: What do we want to see?

The legal problem

Consider the following problems that exist in South Africa's telecommunications industry:

- No telecommunication service may be provided without a telecommunication service licence. Should no appropriate category of service exist in terms of statutory categorisations there is no way to get a licence. For instance, should an enterprising individual want to set up a public-access cabled or wireless LAN service available at a fee at an event or public place, there is no category of telecommunication service by which it can be licensed. Also, should an operator want to set up a cabled network in a metropolitan area to provide converged television (TV) broadcasting and telecommunication services, there is no category of service that would allow it to do so.
- No provider of a national telecommunication service can come into being unless invited by the Minister of Communications. Current law pre-supposes that only government, and not entrepreneurs, is endowed with the wisdom as to whether any operator of a type existing or not existing is needed and can be accommodated in the marketplace.
- A telecommunication service licence makes it impossible for a licensee to make radical mid-course modifications to its business plan on the basis of experience gained in the marketplace. For instance, the licensee cannot change the type of service provided to a different service, or radically change fee structure, or use other better-suited spectrum. Neither can the licensee sell off a component of its business to another operator. The mere notion of a telecommunication service licence for pre-defined categories is one that is stifling to innovation, development and competition. Pre-defined categories can never cater for emerging technologies.
- Because of the requirement to be licensed, it is usually not possible for an innovative and enterprising prospective service provider – national, regional or local – to start up an operation in a way that gives it a market advantage, such as being first to market.
- It is not possible for a telecommunication service provider to choose its market, geographically and otherwise, without approval in some way by an instrument of government.
- It is not possible for a telecommunication service provider to vary the fees for its service, on a day-to-day basis, in a way that reflects competitive marketplace responsiveness.
- An operator of a telecommunication network using radio-based equipment does not have the freedom to obtain radio frequency from another operator on a commercially negotiated basis. It is also not possible for an operator to gain from doing away with some of its spectrum, after using spectrum more efficiently. There is usually little incentive for giving up spectrum in view of the disadvantages. Giving up spectrum in a regime where spectrum is licensed, rather than traded, may result in the operator not being able to get spectrum again, once needed. Furthermore, it is not possible for an operator who would like to wind up its operation to recoup its investments in spectrum – in terms of the usual upfront licence fees paid. The licensee cannot sell its spectrum.
- It is illegal for a company to provide its own data link, using widely available wireless technology, to link its offices on both sides of a street - even though this might be the optimal solution, technically and economically.

- It is illegal for Internet Service Providers (ISPs) to service their users by means of a self-provided network using widely available and inexpensive wireless technologies.
- It is illegal for a Value-Added Network (VAN) service provider to offer a telephony service by means of voice-over-IP.
- It is illegal for a private person to communicate with their next-door neighbour electronically by means of an inexpensive intercom system.

These restrictions are not legal anomalies. They are the deliberate act of politicising the telecommunications industry by officials charged with managing the “public interest”. It is time for South Africa to review the arguments behind the political decisions and decide whether they still bring benefits exceeding costs. Jobs, investment and wealth will remain scarce in South African if this is not done quickly.

Political control of an industry

In terms of its impact on South African business, the Telecommunications Act of 1996 has no peer. Whereas most laws define what rules apply to a given industry or how specific behaviour may be discouraged, this act names eight companies and sets about creating a market for them, saying exactly what they can do and, by definition, what nobody else is allowed to.

The constitution states: “...every citizen has the right to choose their trade, occupation or profession freely”. Presumably, this means anybody should be able to enter the business of telecommunications should they want to. But the clause goes on to say the state is granted the right to create laws regulating trades and occupations. Regrettably this power has been exploited to create exclusive arrangements for a handful of companies at the expense of the South African public.

The key problem with the Telecommunications Act of 1996 is the exclusion of competition from outside parties and the extreme degree of political interference in the sector. The goal of the Telecommunication Act was to promote universal access, affordable telecommunication services and promote the provision of a wide range of telecommunication services in the interest of economic growth. This has not happened and never will by government dictate. Restrictive practices, especially those that require the Minister to invite businesses to apply for licences, are damaging. A modern economy, dependent on information as a crucial asset, cannot wait for an official to decide that a new business may now be sustainable or that a market is ready for more competition. It presupposes officials are gifted with omniscience, which they are not. Subsequently, the delays built into such a system cause irreparable harm and lost economic opportunities.

The solution would be to depoliticise this sector by repealing many of the restrictive clauses in the telecommunications legislation (see Chapter 6 for suggestions), opening the market up to competition. Content industries would be similarly freed if restrictions were repealed from the Broadcasting Act of 1999. Highly politicised industries inhibit growth because vested interests chase incentives other than those required for economic efficiency. If government extracts itself from micro-managing the communications business, the distorted incentive systems are removed. Business can then focus on providing services to its customers instead of courting political favour.

Laws of general application

A concern for the state when liberalising a market is that government will lose control. Without sector-specific regulations – and a regulator – officials fear business running amok. This is unfounded. Even without a specific industry regulator, businesses can function and operate fairly. Government need only rely on the common law and some general statutes.

Issues such as consumer protection or competition law, although explicitly mentioned in telecommunications legislation, are just as easily dealt with in tort laws or by state agencies already in place (such as the Competition Commission). Concerns about the dangers of radio-wave emissions from equipment are defined in statutes such as the Hazardous Substances Act 1973. There is no need for a regulator to draw up additional rules for firms operating in this sector.

Once competition is established, micro-managing the sector is also unnecessary. Under the current situation the regulator is supposed to concern itself with interconnection arrangements, price tariffs, quality standards and market studies. No wonder the industry believes the current authority is under-resourced – it has to take decisions on every move in the sector. A competitive environment would not need such management. Prices would be regulated by competition from rivals, standards would be maintained by customers requesting quality at certain prices, and interconnection arrangements would be made by firms negotiating to their mutual advantage. The OECD report on telecommunications regulatory reform (2002,63) notes:

As competition develops, the regulation of the telecommunications market should rely on competition law, and sector specific regulation should be reviewed periodically in order to streamline regulations.

The government need not worry that in a world of converged communications a wide-ranging regulatory authority is required. In fact, the opposite is true. Once a market is opened to competitive forces, the common law built up over centuries is enough to keep firms in check and consumers protected.

The role of the regulator (if any)

Market players have been calling for a strong regulator in the communications sector, claiming the Independent Communications Authority of South Africa (ICASA) is not in a position to fulfil its functions. However, it is unclear in a new policy environment why such a strong regulator would be required. If the ICT sector wants the market freed up, surely the idea of a strong regulator is contradictory?

Perhaps defining the functions of a regulator would help understand their request. According to the OECD (2002, 21), Oftel – the UK regulator – has the following mandate:

- Ensure customers have the best deal in terms of price, choice, value for money and access at any time to a minimum set of services at reasonable cost.
- Encourage competition in infrastructure and services as the best way to secure the best deal, minimising regulation in step with the competitiveness of markets.
- Regulate retail prices (and quality of service) where the market does not sufficiently protect customers.
- Regulate interconnection charges and other conditions where appropriate to safeguard competition.
- Carry out market reviews to assess state of competition and hence appropriate regulation.
- Consider claims against operators of exploitative or anticompetitive behaviour and, where appropriate, impose suitable remedies within its powers, including modifying licences.

These functions concern themselves with promoting competition in the customers' interest. However, a market that is effectively competitive does not require regulation to promote competition. In light of the overlapping technologies between digital television, broadcasting, Internet, radio and so on, it is difficult to see how an open environment would be anything less than fiercely competitive.

Price regulation and monitoring is unnecessary in an unrestricted market, even if it is only applied to the historical monopoly. The best way of dealing with the power of the incumbent is to expose it to competition or the threat of competition. Tampering with prices assumes officials at ICASA are in a better position than the directors of the company to reconcile customer demand and the costs of providing services. Abuses of power are unlikely in the competitive environment and if discovered are adequately dealt with by the Competition Commission.

What may not be so obvious behind the calls for a strong regulator is the vested interest of other players. There are two issues here. First, some market participants would like to see rules restricting players like the current monopoly licence-holder – Telkom – in order to attain privilege in their own markets. They want a strong regulator to enforce these restrictions to grant them relief from a powerful competitor. In the interests of the South African consumer these calls should be ignored. Open markets mean it is the responsibility of each player to carve out the niche in which they can be most successful. Requiring a strong regulator to keep markets segmented will not be efficient for the economy as a whole.

Second, there is the request to access Telkom's infrastructure. Requesting a regulator to enforce such access confers benefits on that supplier without any corresponding costs. It is an unfair subsidy that Telkom (as a private company) is forced to pay. The correct thing would be to have the operator negotiate terms with Telkom to their mutual benefit or compete by building alternative infrastructure.

Policy makers should negate the need for a regulator by lifting all restrictions to competition. The best consumer protection is a competitive market and, where required, redress is adequately dealt with under current South African law. Concerns about unfair business practices, price-fixing and so on are covered in current competition legislation. No separate regulator is required to duplicate work already being done.

The role of licences (if any)

It should not be forgotten that licences are a form of regulation. Any discussion on the role of regulation in the telecommunications and broadcasting sector would be incomplete without discussing the function of licences and whether this form of control brings benefits outweighing costs.

Licences tend to be of two kinds. First, there is the exclusionary licence, which grants a right to do something and by definition denies that right to someone else. Such licensing exists as a way of creating political patronage. Those with the licence are granted a monopoly market and unfair profits. Those without are denied the opportunity to compete.

The second kind of licence does not confer exclusionary benefits on its holder but is used to notify government of the holder's activities; for example, a retail trading licence. These documents are tantamount to registration of a particular business activity, which is then subject to certain terms of trade. While not necessarily imposing any direct obligations on the holder they do impose other costs; principally, the time that has to be spent on the acquisition of the licence and perhaps fees for the licence itself. Bureaucratic delay can add further costs if licences are not issued promptly.

In defining policy for the telecommunications and broadcasting sector, it is imperative that exclusionary licences are done away with. They do not serve general economic development but open the door to discretionary political practice. Private energies are diverted to rent-seeking, which leads to the corruption of public officials and sub-optimal service from suppliers shielded from competition. Exclusive licences designed to allocate scarce resources (such as spectrum) are better replaced by a

system of private property rights (see Chapter 4), which delivers all the benefits of licensing without placing power in the hands of bureaucrats. Open and competitive markets are better at determining efficient owners.

For non-exclusionary licences, recent telecommunications policy developments worldwide have seen the emergence of class licences – or more strictly, authorisations – which attempt to do away with laws built around specific technologies. These authorisations focus instead on the general nature of the business activity in question – such as a network provider or content broadcaster – and regulate accordingly.

A popular aspect to these authorisations is that for many categories there is no requirement to register with government at all and no fee payable. This is certainly beneficial but a better solution would be to define only those classes that require special terms and conditions and allow everything else. This more open view – allowing what is not specified – would help foster an environment of experimentation and would not artificially stratify businesses along lines dictated by government regulations. The danger in attempting to define all classes of activity up front is that it is impossible to know what new services technology will deliver. In the UK this was only done because it was a requirement that all telecommunications activity required a licence. Class definitions were required for innocuous business use simply to get around this problem. South African telecommunications policy should develop classes for activities deemed to have special conditions of operation, and leave free and undefined all other classes.

If, instead, all manner of class licences are defined for the South African market, it could result in the skewing of business development. If licences determine or confer certain political benefits, by structuring businesses a certain way, then suppliers tend to be drawn down a particular route. In Malaysia, it was found that duplication of equipment amongst service providers was a result of licence and regulatory requirements; a result that would not have been the case if purely economic forces had been at work. If new businesses emerge that require licensing in the opinion of the government, additional classes can always be created at a later date.

In summary, it is suggested South Africa move from a licensing regime to one that is competition-based, operating under a legal framework of generally applied laws. There is no valid reason for businesses to have to acquire licences that are not exclusionary. They simply impose costs on business and whittle away South Africa's international competitive advantage.

Separation/non-duplication of powers

One complaint about ICASA's impotence is the referral to the Minister on many key points, notably the setting of dates or the offering of invitations for new licences. Some of the calls for a strong regulator refer to a clearer separation between the body responsible for issuing licences and a political arm of state. Inevitably there will be conflict when the Department of Communications is responsible for both opening up markets and attempting to maximise the privatisation value of state assets. Only a truly independent body can resolve these conflicts.

Of more concern is the scope of authority the Department of Communication has assumed. The fact that the ICT sector historically fell under this department is an accident of time, mostly related to licensing of the frequency spectrum. Looking at the convergence issue anew means there is a genuine need to isolate those activities that remain relevant to this department and those that belong to other departments or other tiers of government. For example, in the recent Electronic and Communications Act the department empowered itself with laws allowing the establishment of "cyber-inspectors". Was this necessary when the Department of Safety and Security is already charged

with such matters? It was made worse by the poor drafting of the law, giving evidence to the argument that legal competencies in this sphere lay elsewhere.

Another example of “scope-creep” was witnessed at the recent convergence colloquium (July 2003), when the Department of Communications proposed the establishment of a new university, specialising in ICT related skills and research. While this idea could be commended as forward thinking, questions have to be raised why this is coming out of the Department of Communication rather than the Department of Education.

Debate on the issue of responsibility should also cover the extent to which government management and control should be devolved to other tiers of government including municipalities. Rights of way issues (relating to the laying of cable or mounting of radio masts) could be handled perfectly well by the local governments involved. If licences are required for a business wanting to set up a radio station in a shopping centre or rural community, the application handling and approval could be the domain of local government (as it is with liquor licences). If other terms and conditions for business require prescriptive standards, again these should be delegated to the provinces or local governments who know best what their local communities need.

Foreign restrictions

The worst kind of discrimination South Africa could have is one that discriminates the colour of money. Capital for a developing nation is scarce and yet significant catch-up is always possible when foreign money pushes a country up the growth curve.

A new communications policy should place no legal restriction on foreign ownership of assets in the ICT sector. The priority goal (economic growth) should not be lost among other issues – such as local jobs or equity ownership – when building the infrastructure from which other industries can develop. If a blind nationalist policy attempting to maintain control emerges, we are destined for low growth rates. Restrictions on foreign capital achieve only one thing: its absence. Only with a completely open policy will we move on to the international investors’ ‘radar screen’.

The imposition of foreign equity restrictions also hurts domestic owners. If requirements for black ownership are imposed, they can often be self-defeating. Success by black entrepreneurs in a given industry is not fully rewarded if they are unable to sell the fruits of their success to any investor. Restrictions on foreign ownership reduce the number of potential acquirers, which correspondingly lowers the price of the business for sale. This leaves black entrepreneurs owning second-class assets.

Focus on consumers, not producers

For too long communications policy has focused on producers or suppliers of technology. Much of the discussion around convergence has centred on the nature of licensing or regulation or incumbent rights. Little has been said about customer rights.

When the policy for convergence begins to emerge it should be the hope of every South African that the consumer will end up the winner. It will not be a satisfactory solution if the political process degenerates into a producer squabble, with ‘patronage pie’ carved up in some generally acceptable political allocation, as was done in 1996 with the Telecommunications Act.

This country needs to catapult itself into the 21st century and that means benefits must be conferred on citizens as consumers, not just on producers. We want low-price telephony; we want low-price networks; we want low-price digital television and other content broadcasting. Our right to these

services is established when the technology arrives to make it possible. Subsequent restriction on the deployment of this technology due to political games is a violation of this right.

4 Private ownership of the frequency spectrum

Spectrum as an asset

It needs to be emphasised that spectrum – and its inherent value – is a product of invention and innovation largely by industry. Spectrum, unlike water or air, has not always been around. Before Marconi (about 100 years ago) the concept of radio frequency spectrum did not exist and consequently had no value. Therefore, arguments that radio frequency spectrum is a natural resource requiring allocation by government look specious.

In fact, there is no reason at all why spectrum should be regarded as government property. For government to claim the rights to spectrum is equivalent to government claiming rights to the use of all land. It should be acknowledged that spectrum is a technological asset and can be treated as private property, with trade moving the asset to the owner who values it most. Such a system is infinitely more effective at allocation than government discretionary practice and creates better incentives for its efficient use and development. If owners do not use it efficiently in the minds of other investors then those investors will attempt to buy the asset and re-deploy its potential.

Licences, on the other hand, generally lead to wastage. Once a licence has been obtained there is no incentive to part with unused spectrum. Restrictions on licence use inhibit experimentation with other technologies and processes (for example, using ultra-high TV frequencies for other purposes). Licence terms may prevent the holder from sub-leasing spectrum to others (perhaps for large file transfers at night) despite it being perfectly feasible and efficient to do so. Looked at from the perspective of the economy as a whole, such activities increase the efficiency of overall spectrum use. A licensing regime does not promote such incentives and as such should be rejected as the best allocating mechanism.

Frequency spectrum use has the potential to revolutionise the communications industry, making obsolete the laying of cables as infrastructure. However, to liberate this potential a trading environment in spectrum has to be created such that it can be sold, leased, subdivided and aggregated subject only to control interference.

Commons or private property

Two models dominate current thinking on the efficient allocation of the frequency spectrum. The first is a fully-fledged system of private ownership where all rights to the spectrum are vested in the owner. The second is the idea of a “commons” where the resource can be publicly used when interference is not an issue. The ideal solution may be a mixture of the two.

The arguments for either relate to the degree of scarcity present in a market. When a resource is not scarce then many participants can share it at the same time, using as much of it as they need at zero cost. However, when competition for that resource intensifies a private property system creates more efficient allocations. The costs of organising, administering and maintaining a market system are offset by the gains from competitive valuation of the asset in question.

Consider some examples of “commons” use where interference is unlikely: the buzzer for a garage door, cordless phones or the mounting of a microwave beam across two office parks. Allocation of ownership of this spectrum becomes problematic if individual users have to be registered for such use. In this case, it is probably better for the government to establish the radio frequency equivalent of a “public park”, where users are completely free to use the spectrum without permission, provided they follow the rules of the park.

This concept of a “frequency commons” would foster development in the use of radio generally, especially as it relates to the development of “mesh networks”. These are networks made up of small transceivers set up between houses or buildings. The devices use low power emissions to connect each user via a small hop. This virtual community may then connect to a base station on a public-switched network. Such wireless networks have the potential to liberate communication from cable infrastructure, eliminating registration requirements and lowering transaction costs.

Where competition for the spectrum frequency is more fierce, a system of private property rights becomes more efficient. Potential owners would be invited to bid for spectrum bands with no restriction on their use or subdivision. Commercial frequencies commonly used for cell phones or television broadcasting would be obvious candidates.

A mixture of the two systems argues for private property ownership across the entire radio frequency spectrum, with certain easement rights for devices or areas where the chance of interference is limited. The advantage of this system is that as congestion becomes an issue the private property framework is already in place. The owner can then begin to apply charges for use, ensuring maximum efficiency.

Where is spectrum privately owned?

There are several examples where countries have moved from a system of government licences to one where spectrum frequencies are traded as assets. In 1989, a new radio communications act in New Zealand established a market-centred system for allocating available spectrum. The UK also allows licences to move between operators, treating the licence more as a tradable right. However, it is Guatemala that has gone furthest in granting private property rights to frequency spectrum. In their recent telecommunications act (2002), they conceded in their opening preamble:

That, within our legal body, legislation related to telecommunications and radio communications has not allowed an efficient use and allocation of the radio electrical spectrum.

Their comment in addressing this states:

That, it is necessary to create a new regulatory framework which contains general application norms, which gives an agile procedure to allow an efficient use of the radio electrical spectrum and which helps to avoid any type of discretionary use and allocation.

They moved from a framework of licences into a system of tradable, permanent rights with the following simple clause in their telecommunications act:

Article 54. Usufruct Title. The use of the regulated frequency bands will be granted by the Superintendency through titles that represent usufruct rights.

South Africa could move from a licensing regime to one of private spectrum frequency ownership with an equally simply-worded clause. The difficulty then lies in moving the assets into the private sector in an equitable way. There are many policy experiments around the world looking at different ways to do this but what is clear is the opportunity for government to derive a truly “free lunch”. There are estimates that a 1Mhz frequency over the United States of America (US) is now worth as much as \$1 billion. With over 3000 Mhz of prime US spectrum property possible, this puts the total value at \$3 trillion, more valuable than all the gold and silver ever dug out of the earth.

Auctioning of spectrum rights

From the above examples it is evident that owning a spectrum right above a given territory is a valuable asset. The South African government could raise significant money from the sale of certain frequencies, most notably those used in commercial applications such as cell phones, television and radio. The large amount of money raised from such an exercise could be channelled back into the general fiscus for assisting in other prioritised areas, or to the Universal Service Fund (set up in the Telecommunications Act of 1996) to assist with specific ICT policy issues.

The incumbents with their current allocation of frequencies for cell phone or radio broadcasts should argue the case for a simple conversion of their licence to one granting them permanent, tradable rights. Other routes include having all frequencies entered into an auction pot with incumbent licensees retaining the right to hold on to their current frequencies. Should they enter their frequencies into the auction and acceptable bids are made, then current licensees would receive the full bid payment. After this ‘big bang’ auction all frequencies are traded with no restrictions on use or sale.

Black Economic Empowerment (BEE)

The land ownership (and acquisition) issue in South Africa has created a great deal of political conflict, some of which remains unresolved today. However, a more equitable arrangement, with equally large wealth implications, can be attained by attaching property rights to frequency spectrum and distributing them to historically disadvantaged individuals and firms.

Consider the current applications for Under Serviced Area Licences, granted to operators working in areas with teledensities less than 5%. The current applicants have in some cases raised money for the bids from the communities they intend to serve. How much more valuable to these firms would a tradable property right in frequency spectrum be, rather than a licence which can be cancelled or revoked? Such an asset would be registered on the balance sheet of the firm creating genuine wealth for the shareholders, which in this case are the communities discussed. The implications for the financial health of the firm are also improved as they have a securable asset, which can be offered to lending institutions. The sustainability of these firms is improved when their capital costs are reduced by loans secured with truly valuable assets.

Creative thinking on the part of the government can find other ways of transferring this wealth directly to the people. For example, the frequency spectrum over a given community could be housed in a special purpose company, with shares given away to qualifying locals (based on residence or income levels). This company would then be listed on the stock market creating real wealth for the owners. The people could choose to cash in their shares – which should prove politically popular – or retain them for investment purposes.

A spectrum deeds office

A spectrum deeds office would be required, which could be formed out of a transformed ICASA or as a new authority. The deeds office would have the function of planning spectrum for different types of frequency use (for example, by the police or military), and to create opportunities for the sale of frequencies as property.

Subsequently, the deeds office’s main function would be to maintain a title register, checking whether new applications present any conflict in ownership rights. Once satisfied that no serious conflict exists, title is registered with all its parameters including the frequency bandwidth, the geographic space and the time that the spectrum can be used (if not a 24 hour right). The deeds office would also have the function of ensuring the country meets its obligations under the terms of the International Telecommunications Union (ITU) Convention¹.

All information relating to the deeds must be publicly available along with all the parameters associated with the title. This would create the opportunity for spectrum agents – equivalent to estate agents – to act as brokers for spectrum in the marketplace.

Making the move...

In the short-term, re-allocation of inefficiently used frequency spectrum through market mechanisms has the potential to create a flood of spectrum. However, as spectrum becomes more and more congested, increasing use of property rights – and market-valuation – would ensure frequency bands move to efficient users. Government has a role to play in establishing this market, and can assist in developing the correct bundle of rights such a system would require. These include technical constraints such as time, area, frequency, and power output, but may also include easement arrangements (which implies careful and technical definitions of interference).

During this transition it is important that current licences be respected, in that the value paid for those licences not be lost. Moving to a system of private property rights in the frequency spectrum has the potential to create only winners but incorrect policy may create losers who offer resistance to a valuable process. Developing a system that ensures all players stand to gain is an area of intense international debate. South Africa has the opportunity to contribute to emerging best practice by drawing on the country's own unique experiences.

¹ The International Telecommunications Union is an international organisation coordinating telecommunications regulation and standardisation issues between countries. For more detail, see <http://www.itu.int>.

5 Universal access

Open markets imply universal access

Public institutions are the slowest to respond to change. Those that put a heavy hand on their industry are responsible for slowing the delivery of information to their citizens, with the poorest hit hardest. Delays caused by excessive political haggling, regulation, bureaucracy and exclusive licences impose higher prices and lower service levels on communities willing and able to buy reasonably priced communication products.

The cellular phone explosion showed that people can afford communication services provided the prices are right. Seven years ago, only four million South Africans had access to a fixed-line phone. Upwards of twelve million are now connected through cellular technology. What is important to realise is that products like these create a real increase in productivity for people, which translates into higher incomes. Consider a rural businessperson who previously had to travel to the nearest town to negotiate deliveries with a supplier. The cell phone has reduced the need for an actual trip, eliminating all the associated costs. This means real money in the pocket of the business. Compound this effect over many people and it is easy to see that cheap technology has the capacity to seriously alleviate poverty. When people have the opportunity of utilising new technologies (machinery, cars, airplanes or the Internet) incomes go up. The quicker these communities receive these benefits the quicker they can restructure their businesses and personal lives to take advantage. Opening up markets is the way to achieve this.

Empirical evidence of liberalisation in the telecomms industries around the world has shown that when competition is introduced prices of services fall sharply, the quality of the infrastructure rises, and customer service becomes a priority. Any restriction on access to markets, to assist a company while prescribed obligations are met, results in higher prices elsewhere in the economy as one group of customers subsidises another. While arguing that redistributing from Peter to Paul is socially equitable, cross-subsidising markets makes South Africa, as a whole, the loser. The better solution is an openly competitive market where prices for all users are lower.

The debate on second generation rights

If unlimited claims are not to be placed on government, South Africans must seriously debate the extent of claims to second-generation rights. A first-generation right – also known as “negative rights” – is the right for things not to be done to you. You have the right not to be harmed, the right not to be accosted by your government, the right not to be discriminated against, and so on. Such rights merely require another human being to refrain from harming you. Second-generation rights (positive rights) require action to be taken by others to create a benefit on your behalf. Examples would be the provision of education, basic health-care or adequate housing. These rights present problems because they require somebody else to pay. Dirty rainwater and cholera are a default right. Clean water delivered to your tap is a product. We must recognise the distinction, therefore, between subsidising a product and claiming a human right.

Assuming we have managed to define what rights we are prepared to grant, we then need to define the term “adequate”. What, for example, is adequate housing or adequate education? Does adequate health care mean the provision of health goods and services at all levels?

The economically Utopian ideal of a world without scarcity – and therefore endless provision of second-generation rights – needs to be qualified. Such rights become notoriously expensive when people start re-defining all sorts of products as requisite to human development. We can shout from the moral high ground about bridges over the digital divide but let us at least be honest with our-

selves before we degenerate into a lobby-mad democracy, destroying wealth in our enthusiasm to redistribute it.

Universal obligations

Universal obligations are a political trade-off, which do not meet their objectives. Companies were given exclusive rights in return for fulfilling specified social obligations. However, as discussed above, exclusionary rights raise prices for one group of consumers to subsidise another without any of the corresponding pressures of competition forcing prices down overall.

Telkom was given “obligations” in return for a five-year extension of its monopoly. During the exclusivity period Telkom was required to install 2.8 million new lines, including 120 000 payphones. Approximately 1.7 million lines would be installed in under-served areas. Six years on, we see a country with telephone costs four times higher than overseas counterparts, appalling service levels and several hundred thousand disconnected lines. In fact, South Africa is one of the few countries where the fixed-line subscriber network has actually declined. Clearly the policy of “obligations” is not relevant going forward.

The problem with the “obligations” policy approach is that it does not create the right incentive systems between government, suppliers and the end-users. There are two solutions to this problem: supply-side purchasing of products and services, and customer-side purchasing of the same.

Supply-side purchasing

One approach to the provision of services to low-income customer groups is to buy the services for them. This is not the same as forcing exclusive players to cross-subsidise their markets. Instead, if government wishes to provide services in specific areas it should simply buy these services in an open, competitive market. Under this arrangement, suppliers are required to compete for the government’s business, ensuring more services can be bought for less money than under a monopoly regime. Service levels will be improved as unhappy customers bring pressure to bear on a supplier. Poor service means no renewal of the government contract.

When implementing this kind of supply-side subsidy, three important principles should be subscribed to. First, government should impose no social obligations on its suppliers after purchase. Rather, it should merely specify the quality of service it requires and pay the supplier. Second, it should issue calls for tender on a least-cost basis. Open market participants are then in a position to out-bid each other for the government contract. Such an approach ensures that government will be receiving the best possible price, which in turn means more services can be provided with the same funds. Third, no protection from new entrants to that market should be provided. If, after awarding a contract, other suppliers are keen to build infrastructure in a particular area without government support, then it would be wrong to stop them. This approach creates a healthy competitive environment where multiple suppliers are in a position to tender when the terms of the government procurement are up for renewal.

To give an example, since 1994 Chile has successfully used minimum subsidy concessions to expand both electricity and public telephone services to rural communities. Central government leveraged the competition for finance between regional governments, between rural communities wanting their project sponsored by the regional government, and between utility companies to win the concession to serve a particular rural community. Concessions were awarded to the company offering the largest reduction to the maximum allowable subsidy stipulated for each contract.

Customer-side purchasing

The second solution to government subsidy programs is to place the power of choice directly in the customer's hand with a government voucher. The use of vouchers is becoming widespread in areas such as education and health, giving consumers the purchasing power they need to be able to choose their supplier. Milton Friedman first proposed this solution to subsidy in education many years ago. The idea has caught on and many local American authorities are using their school budgets to empower parents with school vouchers. The system relies on private provision of schooling facilities at which parents choose to spend their government subsidy.

Using vouchers creates the right set of incentives for suppliers, exerting a powerful effect on the prices charged and the quality of service provided. This approach also creates an additional benefit in that suppliers must directly pander to the end-user's needs. With government-purchased supply, the customer to be satisfied is the state agent involved, not necessarily the user. This can create problems where measurements of success set by government (number of phones installed, litres of water supplied) are met, but true customer satisfaction is not sought. Customers must take what government has bought for them, not necessarily what they want. With vouchers, customers wield the ultimate power and when treated poorly by a supplier can switch to alternatives.

A similar option should be considered for universal access subsidies in the telecommunications sector. The possibility exists to empower the customer using redeemable vouchers to purchase specified products. The provision of Internet access for schools and the subsidisation of community pay-phones are examples where access can be achieved by putting the buying-power in the hands of the consumer. In each case, the school or organised community would be issued with government vouchers, which would be redeemable at a supplier offering services to the school or community for a period of time. The amount redeemable on the voucher would be set by the relevant government department and remains a politically agreed figure coming direct from the fiscus.

Voucher systems ensure the correct incentives are in place for all players. Government gets the best bang for its buck by buying goods for its "customers" at the lowest possible price. Suppliers do not have to punish one set of users in order to subsidise their obligations to another. And customers reap the benefits of better service by having the power to walk away from suppliers in the event of non-performance.

Television and radio as universal services

In many regards, the South African Broadcasting Corporation (SABC) already operates as a private company with much of its current revenue derived from private-sector advertising sources. Recently, its radio stations were separately incorporated and successfully sold off to private owners. It is proposed the remaining aspects of the television and radio businesses be moved into private hands.

The constitution stipulates (192) that a national authority be set up to "*... regulate broadcasting in the public interest, and to ensure fairness and a diversity of views broadly representing South African society*". However, this does not imply a national broadcaster. It merely says the government is obliged to regulate what broadcasting there is, in whatever form this might take in a world of converged technologies.

Certainly, government policy is to ensure a reasonable mix of local and international content, with local products reflecting the nation's language and cultural heritage. But as suggested above, government is in a position to subsidise this outcome on the other side of the market by buying services it deems relevant and necessary.

Examples could be subsidised projects such as documentaries or local sitcoms. Government could sponsor news slots at several broadcasting companies to ensure bulletins are broadcast in languages other than Zulu, Xhosa, English or Afrikaans. This might seem anathema to politicians used to dictating requirements, but the subsequent effect is a positive one. Such subsidies would have to be bought at commercial rates, which means the time purchased from the commercial television station is valued correctly. This is better for understanding the opportunity cost of having a government-subsidised program, produced in the “public interest”, compared to the competing bid of a private firm advertising its wares. At least in this manner such subsidies are clearly reported in government finances and their true cost to society known. By valuing them correctly the country can then decide whether such services remain in the public interest or whether they would rather accept alternatives.

Government provision of services

The current assumption about the responsibility of universal service or access as it relates to the ICT industry is that it remains the domain of the Department of Communications. There is no reason why this should be so. For example, the Department of Communication should not necessarily be responsible for organising the provision of Internet facilities or other national networks for schools. Rather, this remains the domain of the Department of Education. Similarly, the setting up of tertiary institutions specialising in ICT should also remain under the control of the Department of Education. The point is that the government department involved in the provision of the publicly funded service should be the one to organise it. The basis for such an argument is that presumably this department would be closest to its constituents and would therefore better understand their needs.

It also needs to be mentioned that the public provision of technical goods and services should not fall on the ICT industry alone. If government chooses to redistribute wealth, favouring some consumers over others, then it should not fall on the supplier to provide these goods via obligations. No one would expect the farming industry to subsidise food-aid offered to stricken regions in return for government favours. Trade and Industry does not require the car industry to make buses available to municipalities in return for export credits. Rather, subsidisation of services should be drawn from the general fiscus and managed by the relevant government department. The removal of obligations corrects distortions in prices and makes subsidisation more visible to market players and the taxpayer.

Devolving provision

A further point on the issue of government provision of services is which level of government should be responsible for their purchase. In order to encourage not only the breadth but also the depth of democracy in this country, local and provincial government must look to pull responsibility down from central government. Local and provincial governments are in a far better position, due to improved information, to supply their communities of interest.

Community information is one particular area that local government can take responsibility for. Community radio – funded or subsidised by government – could be provided for in the budgets of local and provincial government, not central government. Central government need only set general priorities and directions in policy. Specific decisions about the nature of the subsidy and its form should be left to local government.

Protectionism under any other name

While black economic empowerment is promoted in good faith, as a policy there are going to be instances when the concept is hijacked by less scrupulous operators. One such technique is to insist on black equity holdings in particular sectors, which place barriers to entry on firms that do not qualify. The protagonist will describe all manner of higher goals for BEE and why this sector needs

such protection, but the end result is the same: reduced competition. This is an attempt at rent seeking and should be immediately recognised for what it is.

It is perfectly feasible for South Africa to find a route between open market provision of social ICT services and aggressive government intervention in the business make-up of this country. However, the customer should be on guard continually for calls for exclusivity, affirmative action, bans on foreign ownership, black equity arrangements and suppliers requiring membership of specific (exclusive) industry associations. All represent techniques for excluding new entrants from providing services to South African consumers. Such protectionism may bring temporary benefits to the producer, but any consumer-orientated policy approach would reject such self-defeating actions.

A consumer-orientated ICT policy would ensure that anybody is able to provide infrastructure and services. Where worthy consumers find it difficult to purchase services due to lack of income, government may “top-up” with public funds. However, any restrictions on the colour, size or ownership of the firms providing services to those communities in essence create cartel-like behaviour. This reduces competition, raises prices, lowers service levels and reduces choice for consumers.

There are many aspects to BEE, not least of which is making sure that previously disadvantaged people have access to modern communications. Empowerment must therefore be understood as a consumer-orientated policy (through lower prices) just as much as a supplier-orientated (wealth transferring) one.

Investment in the industry

Should government be involved in subsidising (directly or through state loans) actual areas of infrastructure within South Africa? If broadband is the technology of the future should government not play a role in subsidising its delivery? Some suggest the private market cannot afford such large-scale investment and that government is therefore required to kick-start these initiatives. This is nonsense. If the services are demanded there is no doubt the private sector will supply them. In South Korea there were government initiatives and public spending (US\$1 billion) on broadband infrastructure, but it was the private sector that contributed nearly fifteen times as much investment capital. Where there is an unrestricted investment return there will be an investor.

There are three considerations in the debate on government investment in infrastructure. First, there is the question of whether government should respect the principle that any legislation or state involvement should be technologically neutral. This is an important principle and should be upheld wherever possible. As much as broadband or certain wireless technologies may seem attractive now, for government to allocate public funds to their development is an attempt at picking winners. Government should lay no bets on the building of infrastructure but should instead focus on buying services for citizens without adequate incomes. How these services are provided to the communities involved remains the decision of the supplier, who assumes the risk of using particular technical equipment.

The second argument rejecting aggressive government involvement is that the focus of government should be processes, not outcomes. That government wants to see South Africa with a modern developed information infrastructure is not in question. However, it can achieve that by putting in place the incentive framework within which private players set about solving customer problems. It should not attempt to be both player and referee.

Finally, the consumers who have to use technologies would be in the best position to decide what works and what does not. Initial uptakes by aggressive first-time users should not send premature signals to government officials keen to employ the latest and greatest. Technology fashions and

consumer preferences change quickly, so it is not the domain of government – which should deliberate in its decisions – to try to second-guess which infrastructure is best. Government can “pull” infrastructure through the market by creating demand for universal services, but should not attempt to “push” it through by directly investing in specific technologies.

6 Transition

The ICT sector has already declared its unequivocal support for an open-market policy in telecommunications, and government should move towards this environment quickly. A digital divide is as applicable to legal regimes – that is, countries – as it is to definitions of the rich and poor. If South Africa is not to lag behind its overseas competitors it needs to bridge this legal divide as quickly as possible.

The problem is to ensure the timeframe between “managed liberalisation” and “liberalisation” is as short as possible. This chapter looks at specific elements of legislation that could be repealed or amended, and considers those required from any new legislation. The proposal at the end is presented in two parts; first as a list of questions, which pick up on the salient points from chapters 2 and 3; then as a set of suggestions based on chapters 4 and 5. Together these elements comprise a framework by which the openness of new legislation may be tested.

Voice-over-IP

Section 39(3)(a) of the Telecommunications Act 1996 states:

No person who provides a value-added network service shall permit that service to be used for the carrying of voice until a date to be fixed by the Minister by notice in the Gazette.

So all that is required for this competitive improvement in the retail voice market is for the Minister to issue a government notice setting a date. Of course, she will find tough opposition from the incumbent. Telkom contend its share price would come under real attack if this restriction were lifted. However, the argument should not be taken too seriously. When Telkom listed, its market capitalisation was equivalent to its 50% shareholding in Vodacom. In other words, it is probably correct to say the market placed no value on Telkom’s fixed-line business at all, valuing only its stake in the cellular provider. To argue that a significant devaluation would take place if the voice-over-IP clauses were relaxed is not convincing.

Re-sale of infrastructure

Section 39(4)(a)(i) of the Telecommunications Act 1996 states that a value-added network service:

... shall until a date to be fixed by the Minister by notice in the Gazette, not be entitled to cede or assign his or her rights to use such facilities or to sublet or part with control or otherwise dispose of the telecommunication facilities in question...

Again, all that is required of the Minister to effect major changes in the way network infrastructure is provided is to set a date removing these restrictions. This of course has to be coupled with the removal of restrictions giving Telkom and the Second National Operator exclusive rights to the laying of infrastructure. Immediate benefits can be had through more efficient structuring and marketing of the infrastructure already in place.

Repeal the acts

The Telecommunications Act of 1996 and the Broadcasting Act of 1999 have done much damage to the South African economy. Probably the best route forward is to repeal these Acts completely and replace them with a new act – one with a better understanding of the effect of convergence in the economy. However, drafting a new bill may delay what could otherwise be a reasonably fast process. The following suggestions are put forward on partial repealing of the damaging clauses in these two acts.

Various amendments to the Telecommunications Act of 1996 are suggested.

Sections 5-27 established a telecommunications authority but were largely repealed by the ICASA act of 2000. However, clause 4 retains the right of the Minister to direct policy at ICASA, which should be reconsidered in light of the calls for an independent regulator. Clauses 26 and 27 describe certain powers and responsibilities specific to the Authority, which would have been better placed in the ICASA act.

Sections 28 and 29 grant the planning of radio spectrum use to the telecommunications authority. This could remain, but may require an additional clause to promote the idea of private property rights in radio spectrum.

Section 30 restricts all radio users from operating except without a licence. This could be repealed to incorporate the environment envisaged in chapter 4.

Section 31 further restricts radio use without official permit, which imposes unnecessary administration on South African citizens. Repealing this clause would be in line with creating a more enabling legislative framework.

Section 32 imposes a prohibition on the provision of all telecommunications services without a licence. As discussed in chapter 4, such a prohibition impedes innovation and entrepreneurship by allowing only what is allowed in pre-defined licenses. The repealing of this clause would allow South African industry to be more creative and flexible in the provision of telecommunication services.

Section 32.A. and 32.B create the duopoly market for Telkom and the Second National Operator until May 2005. In respect of a commitment to more open markets and no restriction of entrants into the public-switched telecommunication service business, these clauses should be repealed in full. Section 32.C creates a monopoly for Sentech and should be repealed.

Sections 33-35 can be amended to incorporate a more flexible licence regime specifying only those classes of activity with specific restrictions. Any communication activity not specified should be allowed unfettered.

Sections 36-53 define carefully how the telecommunications market will operate. It is highly interventionist and restrictive. South Africa will not reap the benefits of open-market telecommunications unless these clauses are repealed, allowing for competition in the specified areas.

Sections 69-77 deal with “right of way” issues that could be amended to devolve this responsibility, where possible, to lower tiers of government.

The balance of the Act deals with emergency centres, numbering plans, directory services and regulatory powers of the Authority. In terms of the Authority, a more comprehensive approach to the role of the regulator would be to combine all of these powers in a single Act (possible amendment to the ICASA Act). The other items mentioned could quite conceivably be products in a new telecommunications regime (as they are in the UK) and therefore are not required in this act. It is proposed that section 78 to the end of the Telecommunications Act be repealed in full.

Also, various amendments to the Broadcasting Act of 1999 are suggested.

Section 5 should be amended to broaden the terms of broadcasting licences. An amendment could state that any class of broadcasting not determined by the Act should be legal and its licensing unnecessary.

Sections 6-26 set up the South African Broadcasting Corporation. It is suggested that this be reconsidered in the light of privatisation.

Section 27 imposes the burden of TV licences on the South African public. The requirement for these radio-frequency reception devices to be licensed seems particularly petty in a converged broadcasting world, especially in light of other television services such as cable and satellite. In the role of revenue generation, licences place the SABC at an unfair advantage relative to other broadcasting businesses. In an open and more competitive environment, the SABC should rely on commercial advertising for revenue, and possibly public funds – as suggested in chapter 5 – to support public service products.

Sections 29-32 require commercial broadcasters to hold a specific licence for each service they provide. As discussed in chapter 3, licences that are prescriptive often re-define markets, limiting products only to those foreseen by public officials. Repealing these clauses would liberate broadcasting markets and allow creativity in the definition of new consumer services.

Sections 33-36 create similar restrictions on signal distribution and multi-channel distributors. As discussed in chapter 3, such licensing artificially stratifies businesses and leads to inefficient outcomes. These clauses should be repealed if the role of defining signal distribution businesses is to be delegated to the market.

Section 40 gives wide political powers to regulate broadcasting. This should be repealed in line with a more flexible approach to a converged broadcasting market. Laws of general application would be better applied to these businesses (as discussed in chapter 3) than technology or industry specific regulation.

The ICASA Act of 2000 was created to encapsulate the role of regulating authorities emerging from the Telecommunications Act of 1996 and the Broadcasting Act of 1999. Significant review of the latter two Acts (as suggested above) would necessitate changes to the ICASA Act, defining a much-reduced role for the regulator and regulation generally.

Changes to the ICASA Act could establish a deeds office responsible for managing frequency spectrum rights. This office would take over many of the current functions relating to licence allocation currently done by ICASA, and could manage the process of moving from a licence-regime to a private-property regime.

Privatise the incumbents

The responsibility for Telkom, Eskom (communication services), Transtel, Sentech and the SABC should be moved to the Department of Public Enterprises to reduce conflict of interest issues for the Department of Communications. The full privatisation of these public assets should then be swiftly carried out to remove government's ownership interest from the communications and broadcasting sectors completely, restoring its role to that of referee rather than player.

Tests for new legislation

In the event of new legislation being drafted to “enable” more efficient communications markets, it is important that measures be formulated by which such legislation may be tested. If South African telecommunications and broadcasting markets are to transform from highly regulated sectors to rely

on competitive markets and generally applicable laws governing business, then such tests are valuable.

The following questions summarise the ideas in chapters 2 and 3, and provide a partial framework within which a new legal environment may be examined.

Moving to an open market environment

- Are all allowed to enter telecommunications and broadcasting sectors?
- Have all restrictions on what content may be delivered over what kind of infrastructure been removed?
- Is pricing unregulated?
- Is regulation of the incumbents minimised?
- Are private companies unfettered from being forced to share their assets and infrastructure?
- Are negotiations and contracts between private firms free from political intervention?

Implementing a legal framework of general application

- Has all legislation inhibiting growth in this sector been repealed?
- Do technology firms rely on laws of general application to regulate business in their sector?
- Is the role of the regulator minimised, with a view to its termination when open competition is established?
- Are legal functions devolved to lower tiers of government where possible?
- Have licensing requirements been applied only where specific policy objectives must be met?
- Are all other acts of doing business allowed by default?
- Are the powers and scope of the Department of Communication limited to those within its competency?
- Do laws focus on giving weight to consumers, not producers?
- Has discrimination against foreign labour or capital been removed?

Finally, the main components of chapters 4 and 5 are brought together in summarised form to suggest an alternative approach to frequency management and universal access policy.

Private property framework for frequency spectrum

- Establish a system of private property rights for frequency spectrum.
- Consider the possibility of auctioning off commercially valuable frequency bands.
- Consider the concept of a “commons” where non-interfering radio use may be unlicensed and unregistered.
- Consider the opportunities for BEE and general wealth creation in granting private ownership of the radio spectrum.

Universal access guidelines

- Use competition to bring prices down to levels that foster universal access.
- Use supply-side or customer-side purchasing to meet specific policy objectives, rather than placing obligations on specific suppliers.
- Devolve universal service provision to the provinces and local government where possible. Avoid one-size-fits-all policies.
- Avoid supply-side protectionism in an attempt to foster local business. Focus on the consumers’ rights.

- Do not implement state investments in specific technologies or suppliers. Government should set about creating policy, not industrial white elephants.

7 Conclusion

Legal battles between Telkom, ICASA, VANs, and ISPs have been a disaster for current communications policy. Telkom has defended its right to lucrative markets on the basis that they were subsidising other less profitable markets. Yet the VANs and ISPs were left without adequate communications infrastructure and were subsequently not in a position to satisfy their customers. The net result is that everybody is a loser. Phase one of managed liberalisation has therefore been a failure. It has not achieved its stated goals of universal access and low-cost telecommunications.

Policy reviews are required when legislation no longer serves, or looks like achieving, the political goals set for it. This is the case with current telecommunications and broadcasting legislation, which means it is imperative that radical changes take place immediately.

South Africa is a notable player in the ICT industry with potential to leapfrog the industrial development undertaken by developed nations. However, in order to do that we need to remove all the “disabling legislation” prohibiting businesses from experimenting with products and services in a competitive market. An open environment will encourage entrepreneurs to set about building infrastructure critical to South Africa’s development.

Policy-makers need to understand how the information economy works and set their priorities accordingly. The days of heavy-handed legislation and regulation are over. They are simply not accepted in a globally connected world. South Africa can choose to opt out of this exciting process, but then we forego all the benefits of belonging to global markets.

The relaxation of control is going to be difficult for a government used to heavy political intervention. However, the state should have confidence in the talents of free people to generate large amounts of new wealth. Government-run industries have rarely shown such ability. This country’s road to prosperity will be determined by economic growth, and to achieve that growth South Africa will require an open communications market.

References

- OECD (2002) *Regulatory Reform in UK: From Transition to New Regulation Challenges*. Paris: Organisation for Economic Co-operation and Development.
- Republic of Guatemala Congress (2002) *Ley General de Tele-comunicaciones, Decreto 94-96 y sus Reformas Decretors 115-97 y 47-2002*. Translation into English.
- Smith, A. (1776) *An Inquiry into the Nature and Causes of the Wealth of Nations*. London: Strahan and Cadell.